

WHAT IS CLAIMED IS:

1. The zirconia sintered body comprising tetragonal zirconia, wherein a full width at half maximum at (111) plane of the tetragonal zirconia obtained by X-ray diffraction pattern measured under following conditions is from 0.38 to 4 degree.

Conditions:

Radiation Source: CuK $\alpha$  beam,  
Voltage · Amplitude : 40 kV × 30 mA,  
10 Monochromator: Graphite ,  
Divergence Slit: 1.0 degree,  
Scattering Slit: 1.0 degree,  
Detector Slit: 0.3 degree,  
Step Size: 0.2 degree,  
15 Time/step: continuous,  
Background Correction: made,  
Scan Speed: 0.4 degree/minute.

2. The zirconia sintered body according to Claim 1, wherein the full width at half maximum at (111) plane of the tetragonal zirconia is from 0.4 to 2 degree.

3. The zirconia sintered body according to Claim 1 or 2, wherein the full width at half maximum at (111) plane of the tetragonal zirconia is 1 degree or less.

4. The zirconia sintered body according to Claim 1, wherein a ratio of the tetragonal zirconia in the zirconia

sintered body is 90 % by volume or more.

5. The zirconia sintered body according to Claim 1, wherein an average grain size of the zirconia sintered body is from 0.01 to 0.3  $\mu\text{m}$ .

5 6. The zirconia sintered body according to Claim 1, wherein a density of the zirconia sintered body is 6  $\text{g}/\text{cm}^3$  or more.

7. The zirconia sintered body according to Claim 6, wherein the density of the zirconia sintered body is from 6  
10 to 6.1  $\text{g}/\text{cm}^3$ .

8. The zirconia sintered body according to Claim 1, wherein the zirconia sintered body contains a stabilizer.

9. The zirconia sintered body according to Claim 8, wherein the stabilizer is at least one selected from the group  
15 consisting of  $\text{Y}_2\text{O}_3$ ,  $\text{CeO}_2$ ,  $\text{MgO}$ ,  $\text{CaO}$ ,  $\text{TiO}_2$ ,  $\text{Yb}_2\text{O}_3$ ,  $\text{Er}_2\text{O}_3$  and  $\text{Ho}_2\text{O}_3$ .

10. The zirconia sintered body according to Claim 1, wherein the zirconia sintered body contains  $\text{Al}_2\text{O}_3$ .

11. A method for producing the zirconia sintered body, wherein the method comprises steps of; molding zirconia powder  
20 having an average particle diameter of from 0.1 to 0.6  $\mu\text{m}$ , a maximum particle diameter of 5  $\mu\text{m}$  or less and a substantially polyhedral shape, and then sintering the molded green body under the temperature of from 1200 to 1400  $^{\circ}\text{C}$ .

12. The method according to Claim 11, wherein the  
25 zirconia powder contains monoclinic crystal.

13. The method according to Claim 12, wherein a ratio of the monoclinic crystal in the zirconia powder is 70 % by volume or more.